Implementation of the E895 data processing farm at LBNL

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The physics goal of the E895 experiment (EOS at AGS) is to systematically study properties of the hot and dense nuclear matter created in a collision of heavy ions in the energy range from 2 GeV to 8 GeV. A large volume of experimental data obtained by the E895 and computationally intensive data reconstruction present a challenge for performing data processing in a reasonably short period of time (1-1.5 year). It has been decided that as a part of the data processing effort undertaken by the E895 Collaboration the LBNL group will create and run a dedicated event reconstruction farm. The ease of porting of the E895 analysis software and existing budget constraints quickly led to an Intel based commodity hardware running SUN Solaris operating system as a platform of choice. During the Fall of 1997 a dedicated farm of Pentium based computers was implemented as a part of the PDSF environment at LBNL. Figure 1 shows a schematic layout of the E895 production farm. Each processing node has an Intel Pentium II processor running at 266 MHz, 64Mb of RAM, 6.4 Gb of disk space. A 100 Mbit ethernet network connects farm nodes. A dedicated 100 Mbit switch provides a fast connection to the rest of the LBLNet and to the High Performance Storage System at NERSC. Each node is running Solaris 2.6 operating system. A set of custom scripts was implemented in order to facilitate a control and management of the farm's operations. Current status of production as well as other information relevant to data processing can be monitored via WWW [1] in real time. The implementation of the Pentium farm provided a significant ($\sim 50\%$) increase in CPU power available for E895 physics analysis at LBNL.

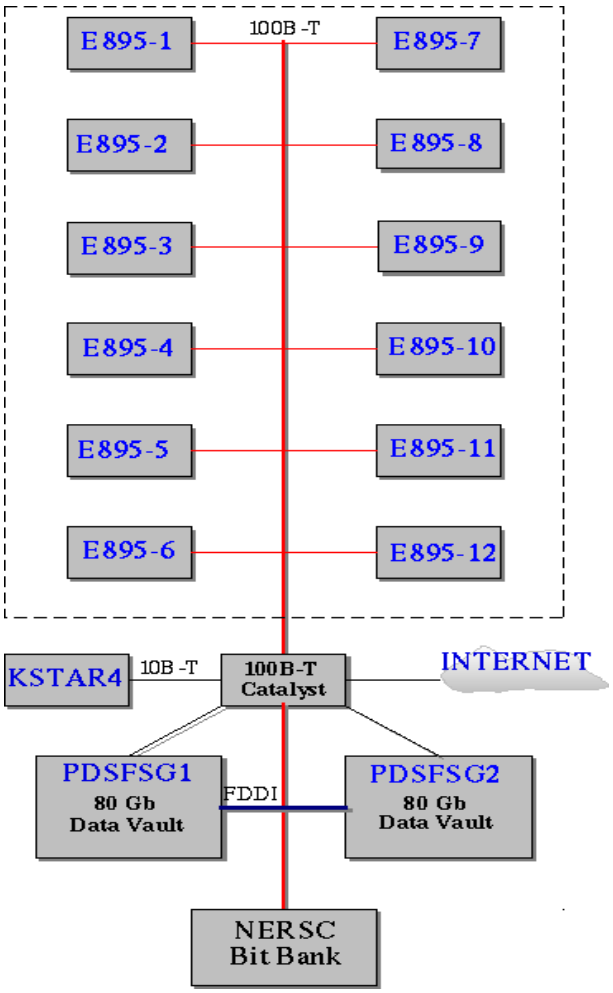

Figure 1: Block diagram of the E895 data processing farm

Footnotes and References

[1] More information related to the farm operation at http://www-rnc.lbl.gov/~panitkin/farm_main.html